

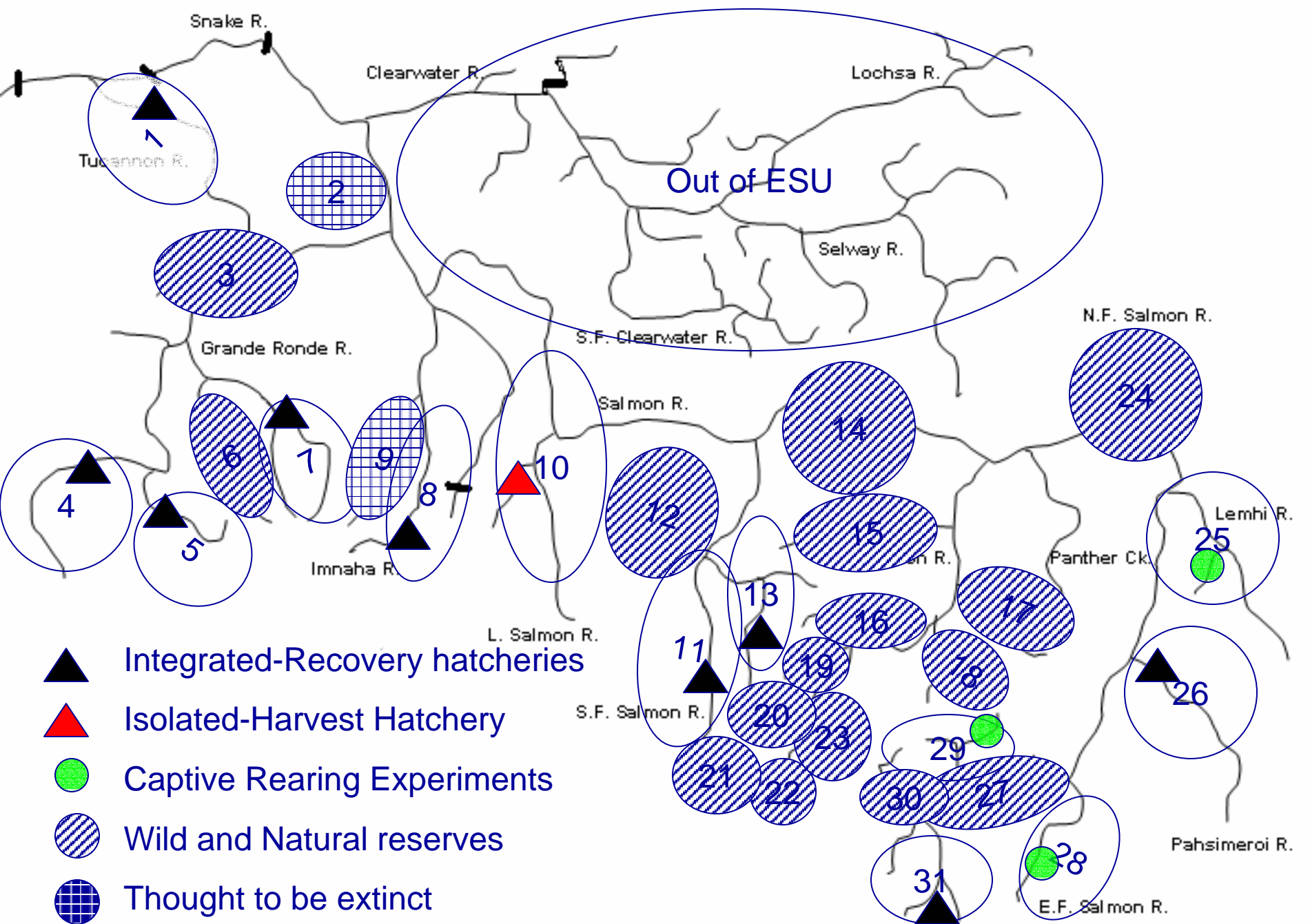
Snake River Spring/Summer Chinook Salmon ESU

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Summary

- There are 31 populations identified by the TRT in the Snake River Spring/summer Chinook ESU
 - 2 may no longer exist as independent populations
 - 16 are being managed as wild/natural fish reserves without hatchery influence
 - 9 have associated, integrated hatchery programs that release listed fish
 - 3 have experimental, captive rearing programs
 - 1 is affected by an isolated-harvest program

Current Hatchery Influence on Snake River Spring/Summer Chinook Populations



Some serious non-hatchery issues continue to impact this ESU

- Habitat loss and instream flow issues continue to limit recovery efforts and affect both hatchery and natural origin survival
- Parent-replacement or lambda values are <1.0 for natural spawners long term due to migration corridor and other out-side-the-basin factors

ESU Artificial Propagation Programs

– captive broodstocks

- Tucannon River: local stock
 - 132,000 conventional smolts
 - 150,000 captive broodstock smolts
- Grande Ronde River: captive/conventional, local stock smolt programs
 - Lostine River – 250,000
 - Catherine Cr – 250,000
 - Upper Grande Ronde – 250,000
 - Lookingglass Creek – 150,000

Integrated stocks – Mitigation hatcheries

- Imnaha: 360,000 smolts
- S. Fk. Salmon: 1,000,000 smolts (summers)
- Pahsimeroi River: 1,000,000 smolts (summers)
- Sawtooth: 1,300,000 Smolts

Supplementation Experiments

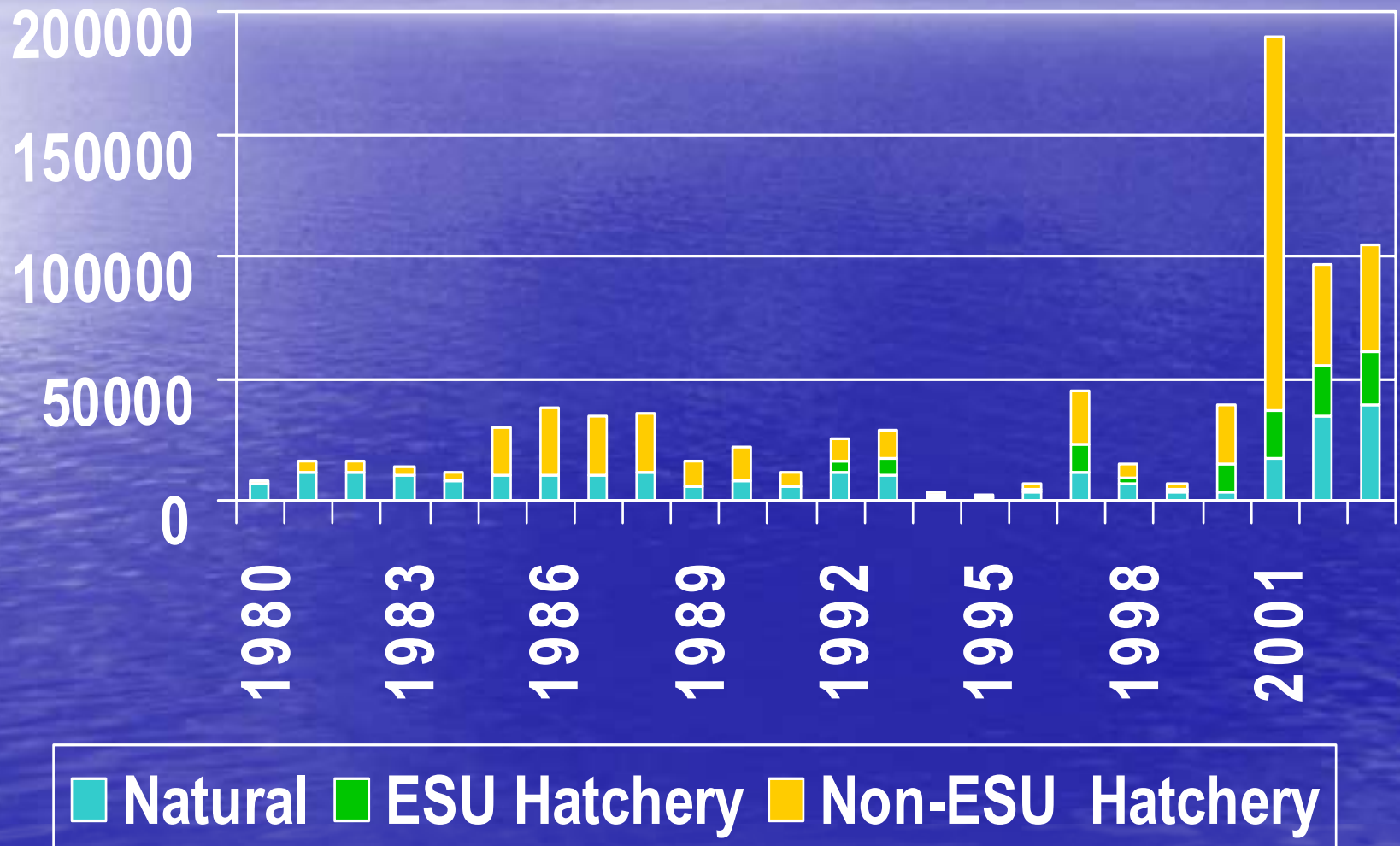
- Johnson Creek (JCAPE) 100,000 smolts, local indigenous 100% natural broodstock
- Lemhi River, East Fork Salmon River and West Fork Yankee Fork – up to 20 pairs of captive-reared adults released for natural spawning

Non-ESU Hatchery Programs

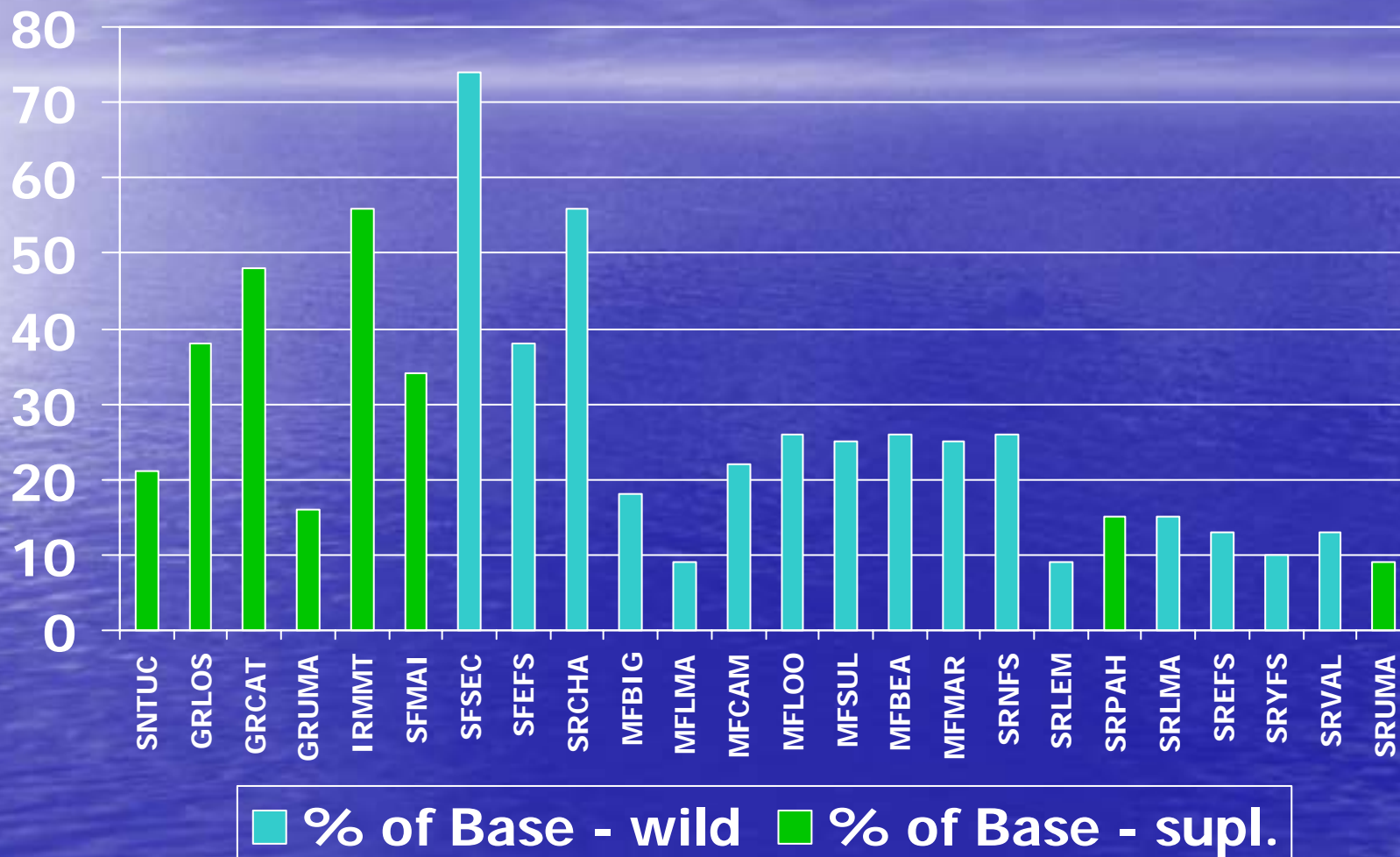
- Rapid River/Hells Canyon: 3,000,000 smolts

(Dworshak [1,050,000 smolts], Clearwater [1,040,000 smolts], Kooskia [600,000 smolts], and NPTH [625,000 smolts and parr] are outside the ESU in the Clearwater Drainage)

Snake River Spring/Summer Chinook Abundance Trend



Snake River Spring/summer chinook ESU populations – Percent of target/base number



Hatchery Listing Policy

Effects of hatchery fish on the likelihood of extinction of an ESU, depend on how hatchery fish affect four key attributes.

Effects on Abundance of ESU

- Overall abundance and number of natural spawners has increased substantially in 3 of the 4 integrated mitigation programs [Imnaha, South Fork, Pahsimeroi – Sawtooth is uncertain]
- Abundance of natural spawners has increased in 3 of 4 captive broodstock/conventional programs [Tucannon, Lostine, Catherine Creek – UGR is responding slowly]
- The captive rearing experiments have had little effect on abundance
- Early returns to Johnson Creek are positive
- Nearly all natural spawner indexes <50% of base/IAT #s

Effects on Productivity of ESU

- Effects of propagation programs on productivity are uncertain:
 - Project reports on the Tucannon indicate HOR are equally as productive as NOR, but neither are achieving parent replacement due to low SARs
 - Idaho Supplementation Studies evaluations are incomplete, results to date are mixed relative to success of supplementation

Effects on Diversity of ESU

- The Grande Ronde Captive Broodstock programs appear to have brought three local stocks from near extinction to a level of preservation.
- All of the Snake River hatchery chinook stocks except Rapid River are local, indigenous stocks that have been managed with good genetic conservation practices since they were founded
- Wild fish reserves and limited release of F1 hatchery fish into areas above weirs preserves local adaptation and genetic variability

Effects on Spatial Structure of ESU

- Hatchery operations have not reduced the spatial distribution of spring/summer chinook anywhere in the ESU
- Some reintroductions above small barriers have taken place
- Outplants of adults and other life stages in vacant habitat occur

Effects of Artificial Propagation on VSP Attributes for SR Spring/summer chinook

Viability Criteria	BRT VSP Risk Score	Decreases Risk	Neutral or Uncertain	Increases Risk
Abundance	3.6	√		
Productivity	3.5		√	
Spatial Structure	2.2	√		
Diversity	2.3	√		

Endangered Threatened Not Warranted

BRT Findings: 12% 68% 20%

Recommendation: **No Change: Threatened**